

FIG. 1

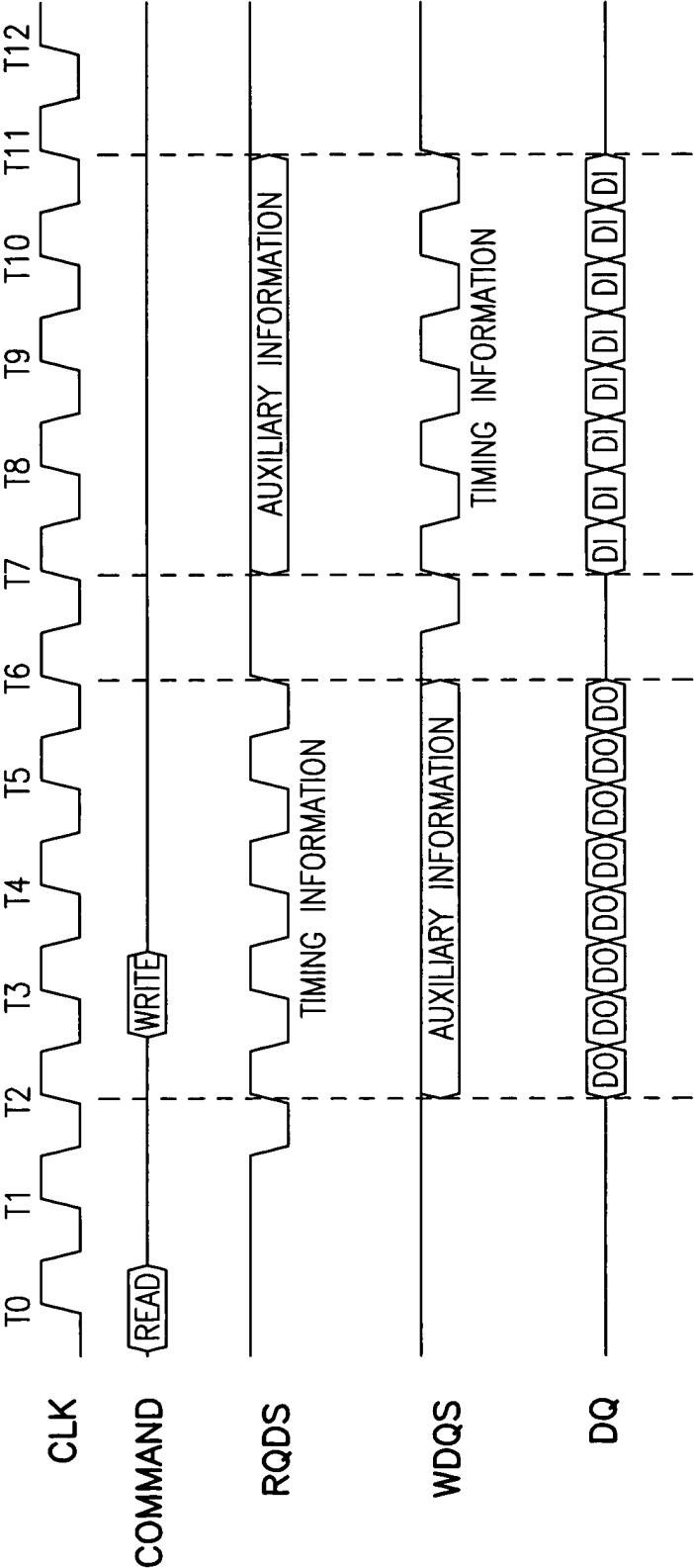
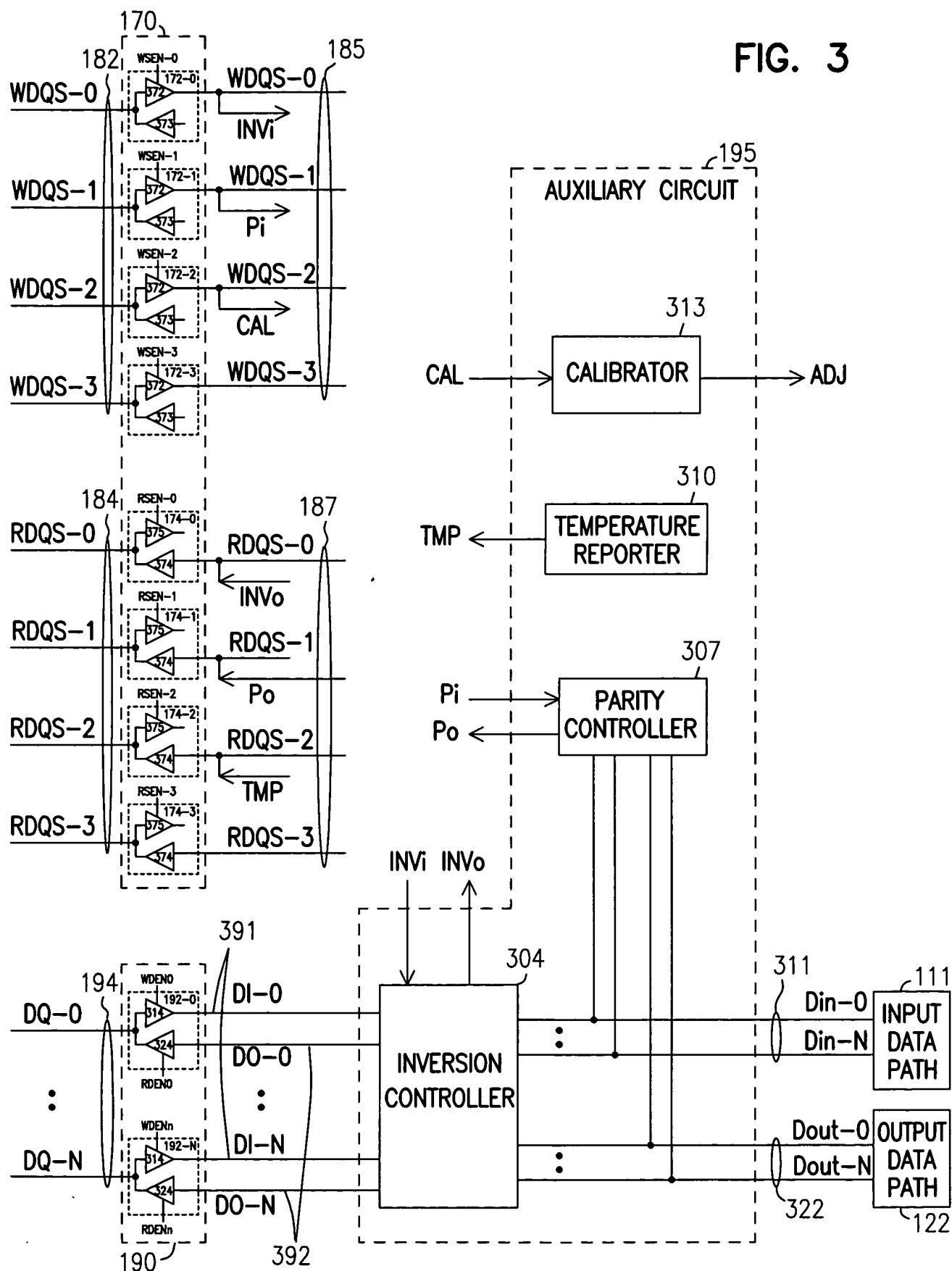


FIG. 2

FIG. 3



INVENTOR: JOO CHOI ET AL.
DOCKET NO.: 303.875US1



| | | B0 --- B7 | | | |
|----------|----------|-----------------|------------------|---|---|
| | | DO _P | INV _O | X | Y |
| ROW 1 { | INVERTED | Dout | 00000111 | 1 | 8 |
| | | Dout | 11111000 | 1 | 0 |
| | | | 00000111 | 1 | 7 |
| | | | 11110000 | 1 | 6 |
| | | | 00001111 | 1 | 5 |
| | | | 11100000 | 0 | 4 |
| ROW 6 { | INVERTED | Dout | 00000000 | 0 | 3 |
| | | Dout | 11111111 | 0 | 2 |
| | | | 00000001 | 0 | 1 |
| | | | 11111110 | 0 | 0 |
| | | | 00000011 | 0 | 8 |
| | | | 11111000 | 0 | 7 |
| | | | 00001111 | 0 | 6 |
| | | | 11110000 | 0 | 5 |
| | | | 00011111 | 0 | 4 |
| | | | 11100000 | 0 | 3 |
| ROW 16 { | INVERTED | Dout | 01111111 | 1 | 5 |
| | | Dout | 10000000 | 1 | 6 |
| | | | 11111110 | 1 | 7 |
| | | | 00000001 | 1 | 1 |

FIG. 5

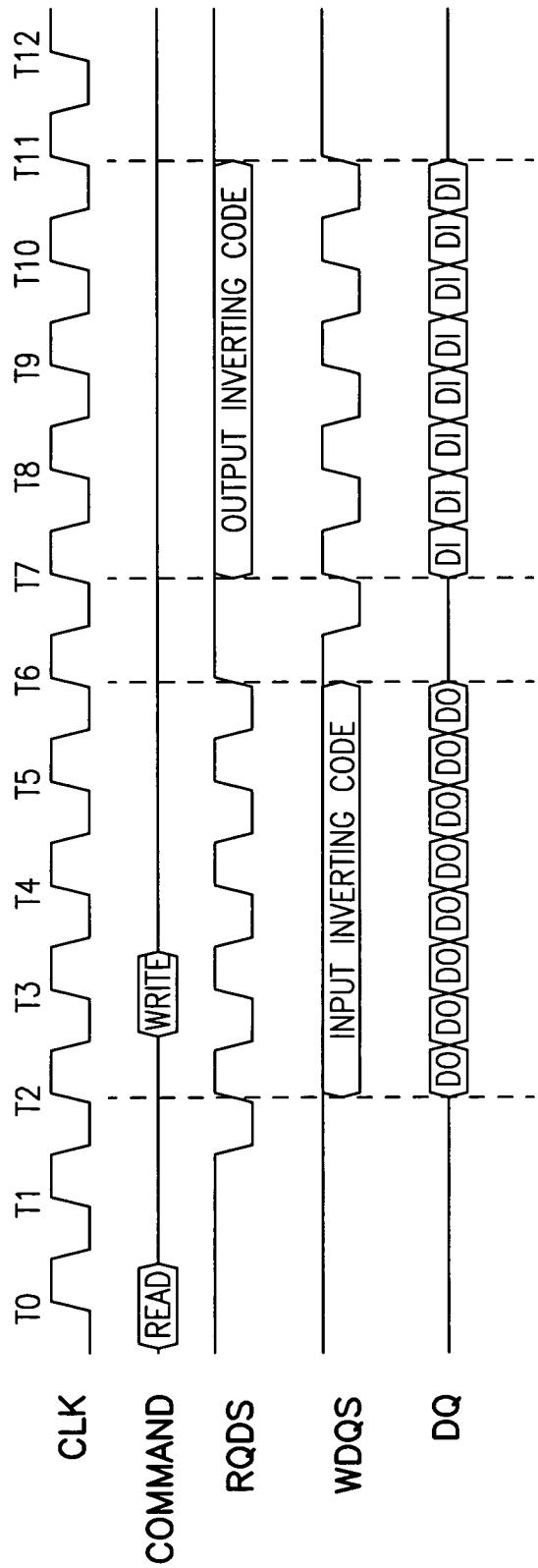
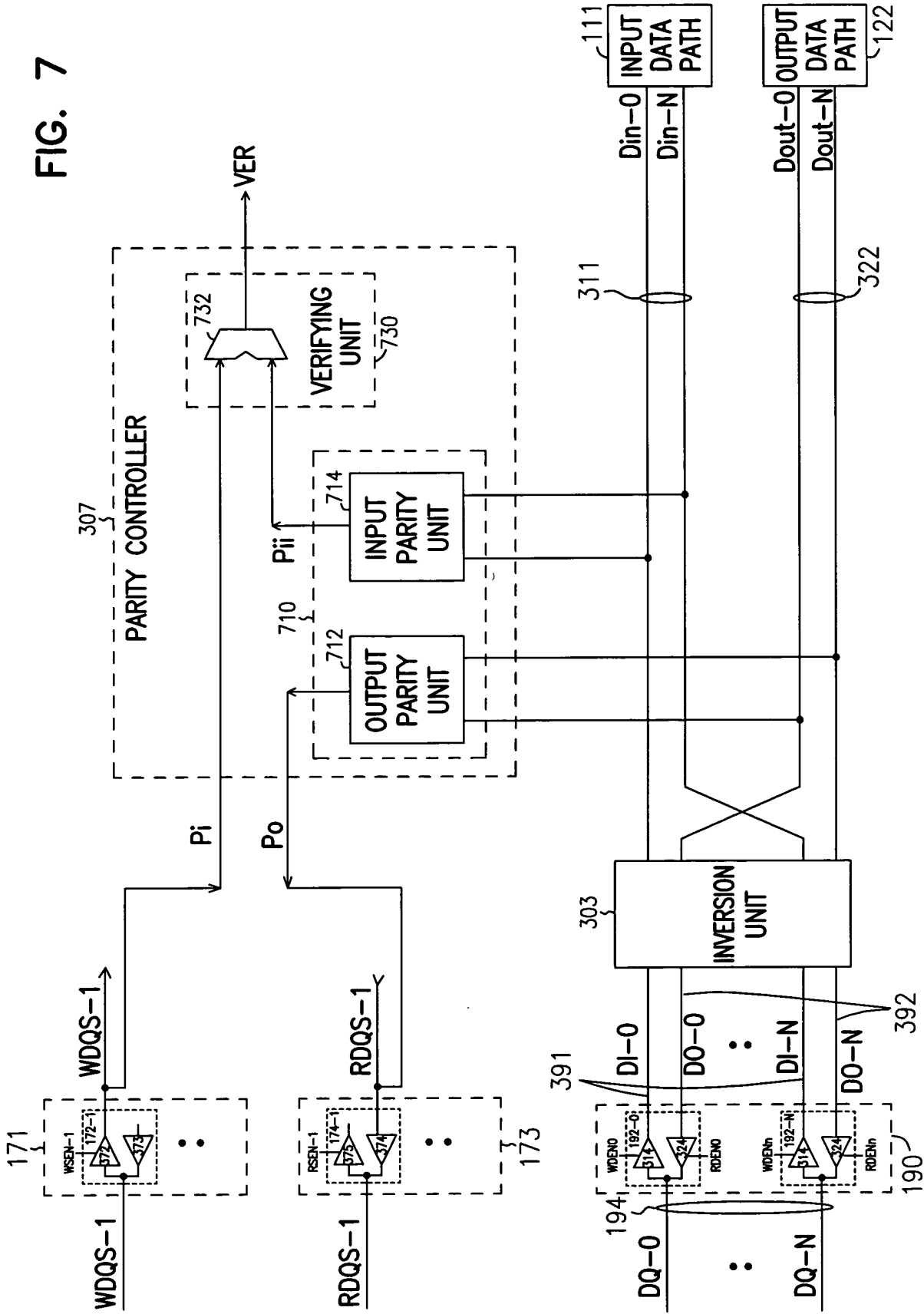


FIG. 6

FIG. 7



| | B0 - - - - B7 | P |
|--------|---------------|---|
| ROW 1 | 00000000 | 0 |
| | 00000001 | 1 |
| ROW 3 | 00000011 | 0 |
| | 00000111 | 1 |
| | 00001111 | 0 |
| ROW 6 | 00011111 | 1 |
| | 00111111 | 0 |
| | 01111111 | 1 |
| | 11111111 | 0 |
| | 11111110 | 1 |
| | 11111100 | 0 |
| | 11111000 | 1 |
| | 11110000 | 0 |
| ROW 14 | 11100000 | 1 |
| | 11000000 | 0 |
| | 10000000 | 1 |

FIG. 8

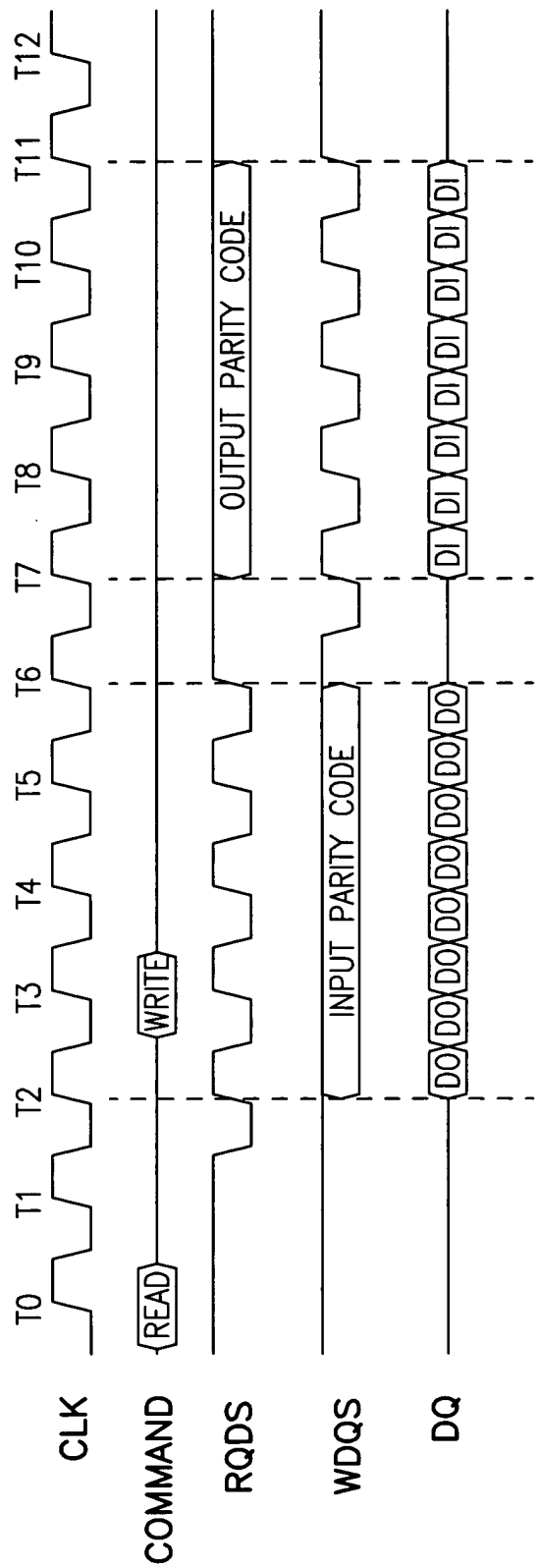
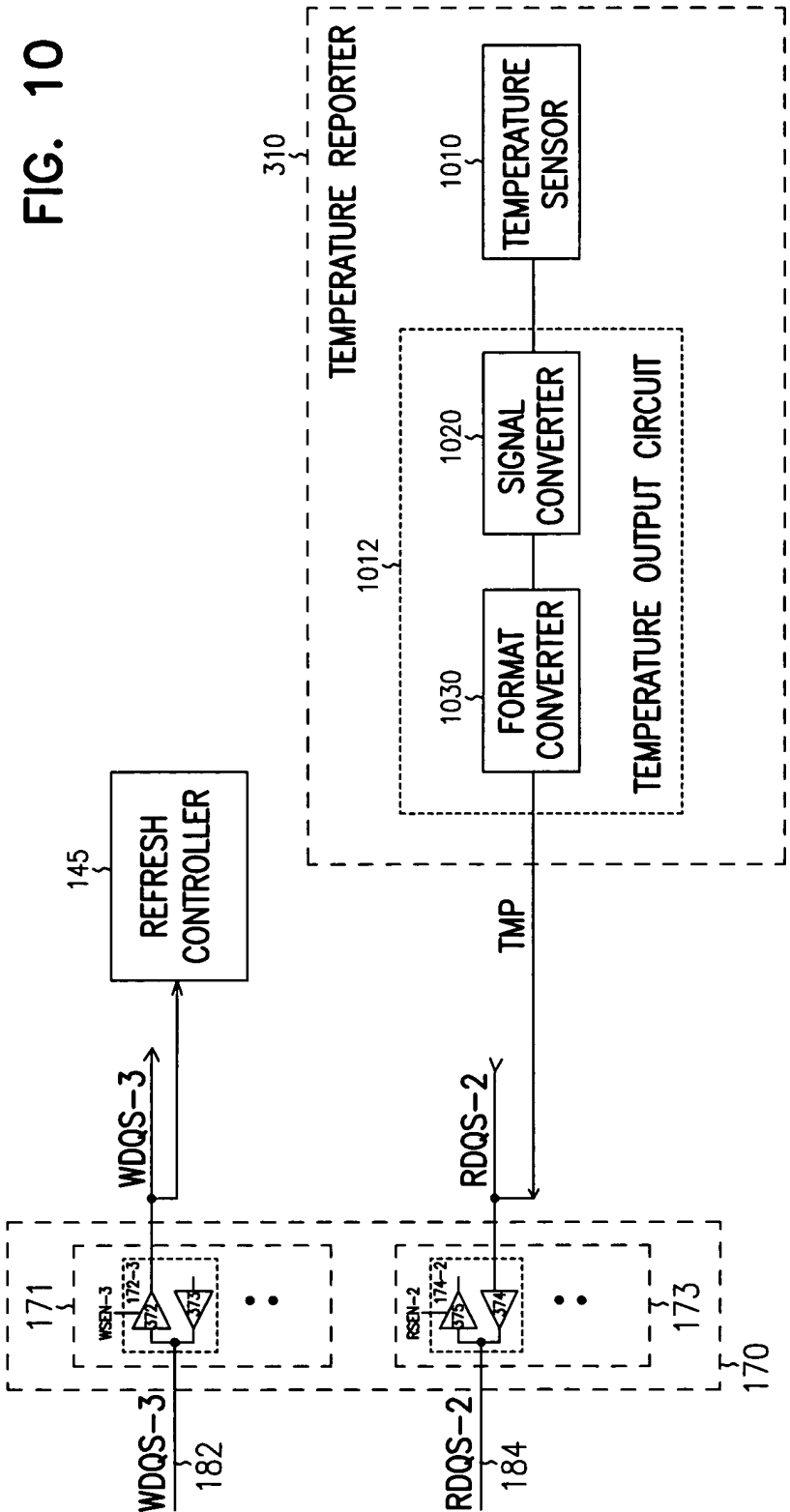


FIG. 9

FIG. 10



| | COL1 | COL2 | COL3 | COL4 | COL5 | COL6 | COL7 | COL8 |
|---------|------|------|------|------|------|------|------|------|
| BITS | TMP | TMP | TMP | TMP | TMP | TMP | TMP | TMP |
| TB0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TB1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| TB2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| TB3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| TB4 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| TB5 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| TB6 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| TB7 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| TEMP °C | 0 | 15 | 30 | 45 | 60 | 75 | 90 | 105 |

FIG. 11

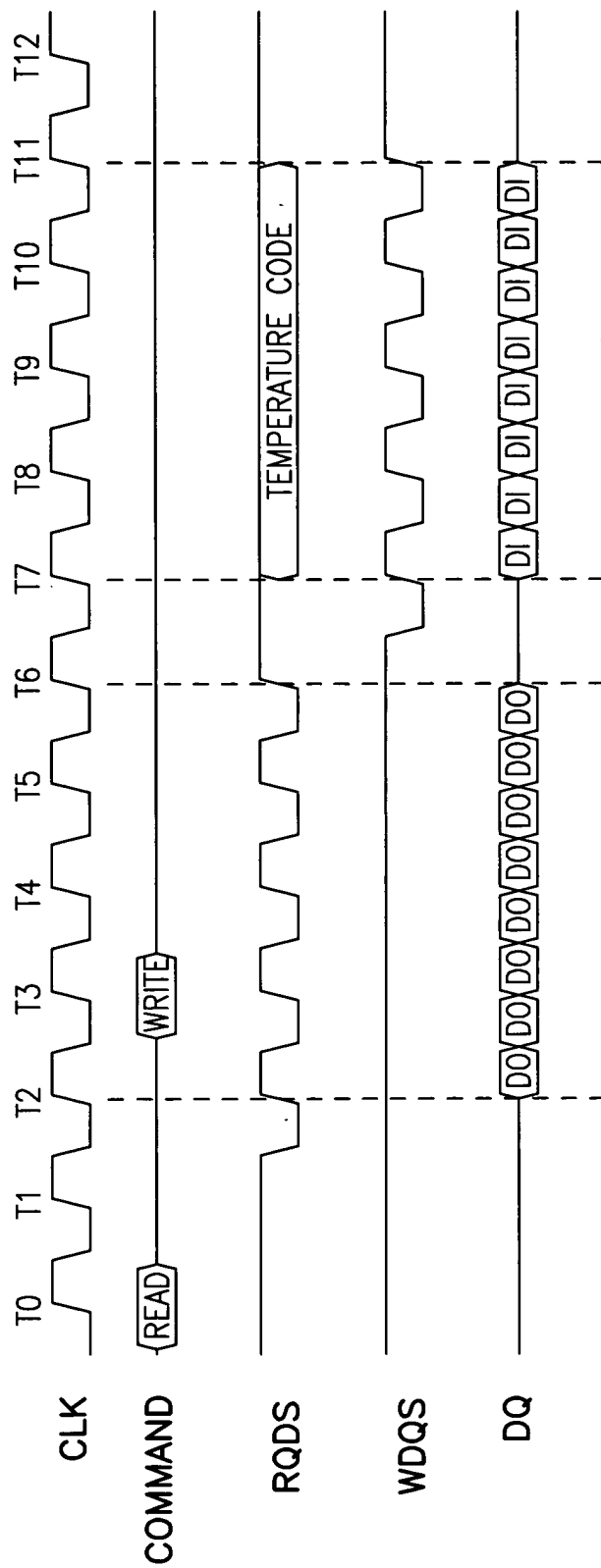


FIG. 12

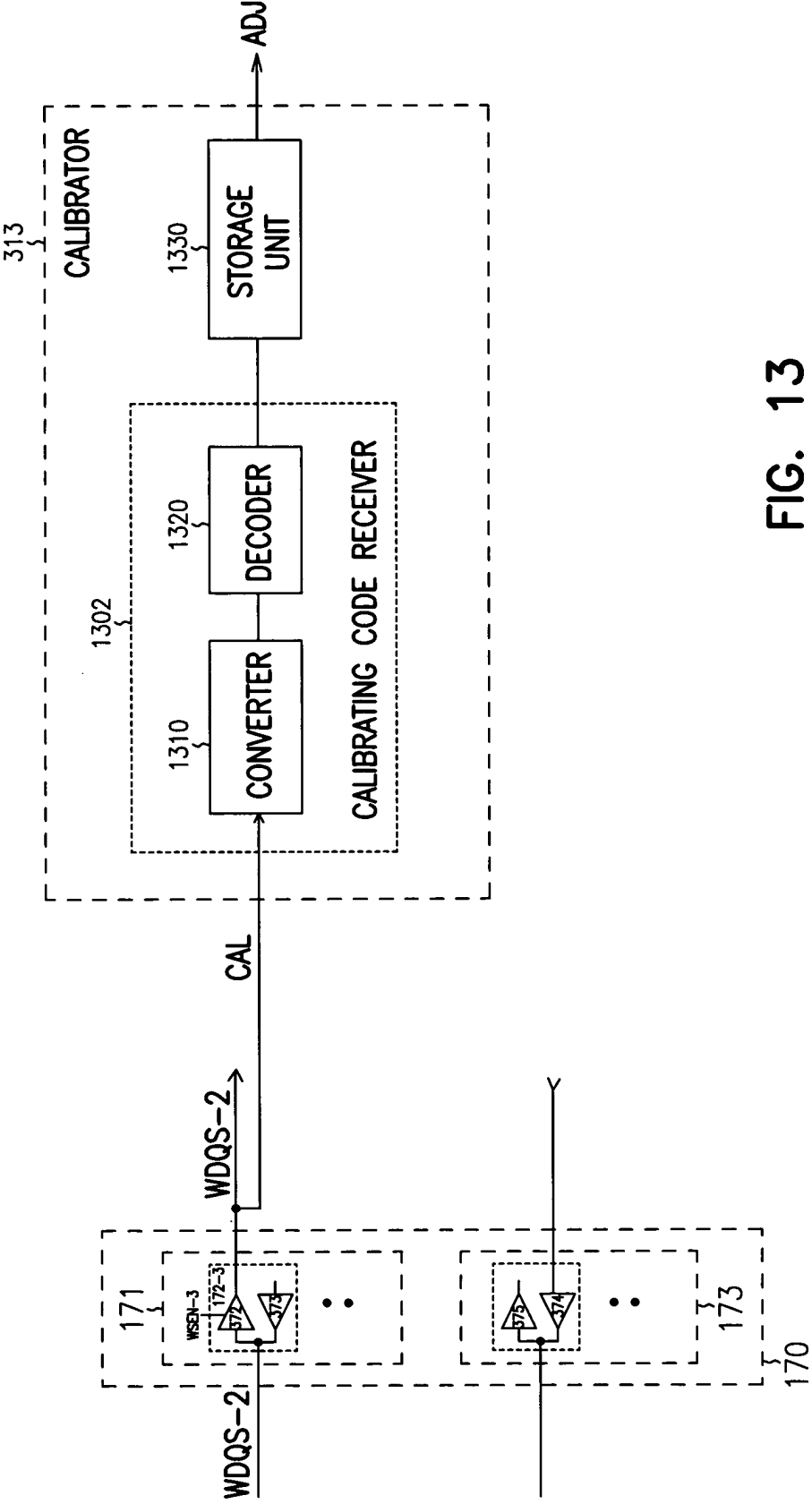


FIG. 13

| | COL1 | COL2 | COL3 | COL4 | COL5 | COL6 | COL7 | COL8 |
|-------|------|------|------|------|------|------|------|------|
| BITS | CAL | CAL | CAL | CAL | CAL | CAL | CAL | CAL |
| CB0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CB1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| CB2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| CB3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| CB4 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| CB5 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| CB6 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| CB7 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| DELAY | -200 | -150 | -100 | -50 | 50 | 100 | 150 | 200 |

FIG. 14

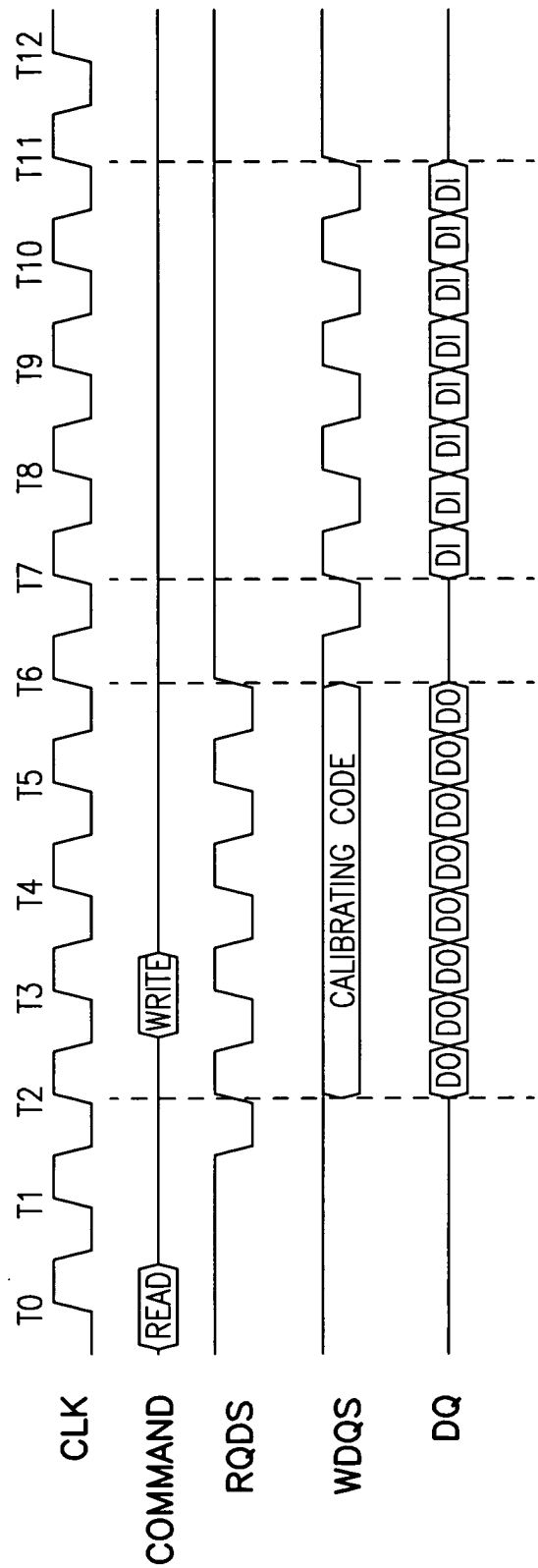


FIG. 15

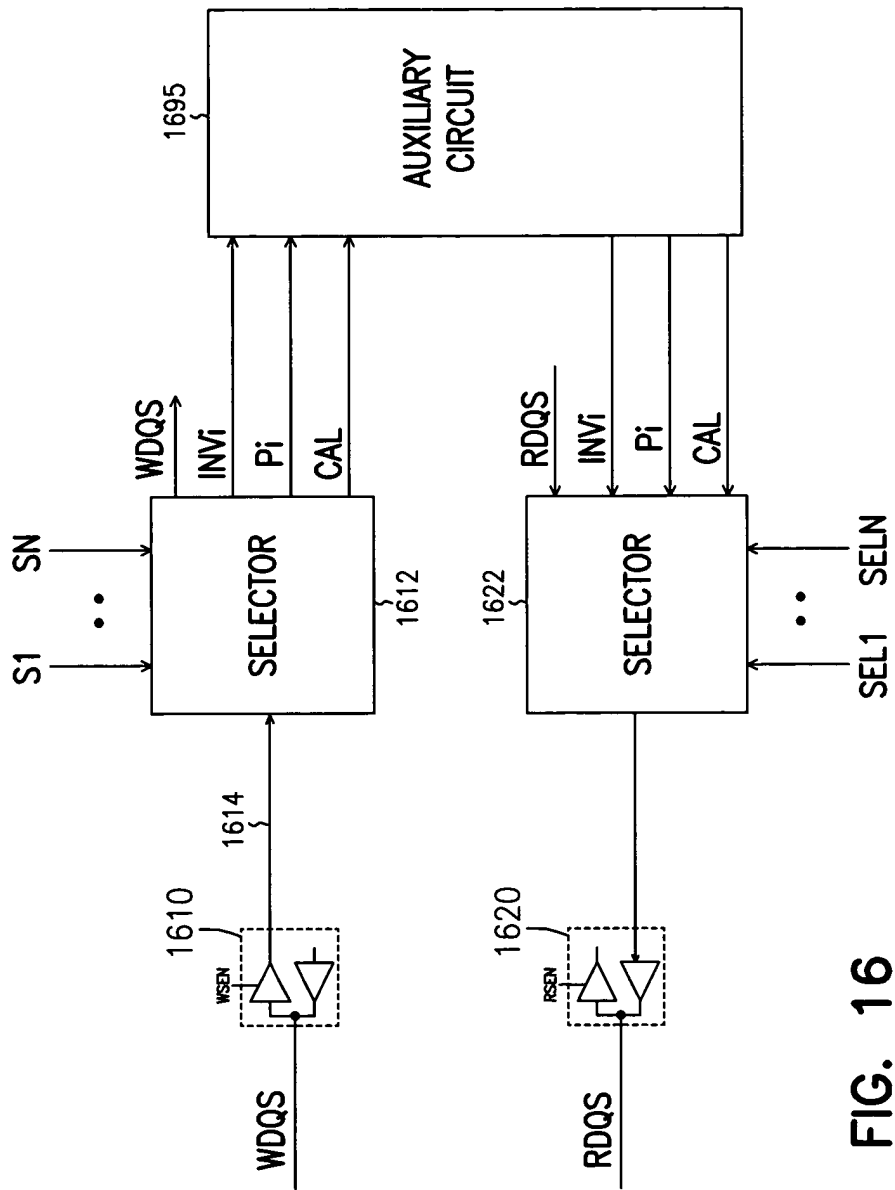


FIG. 16

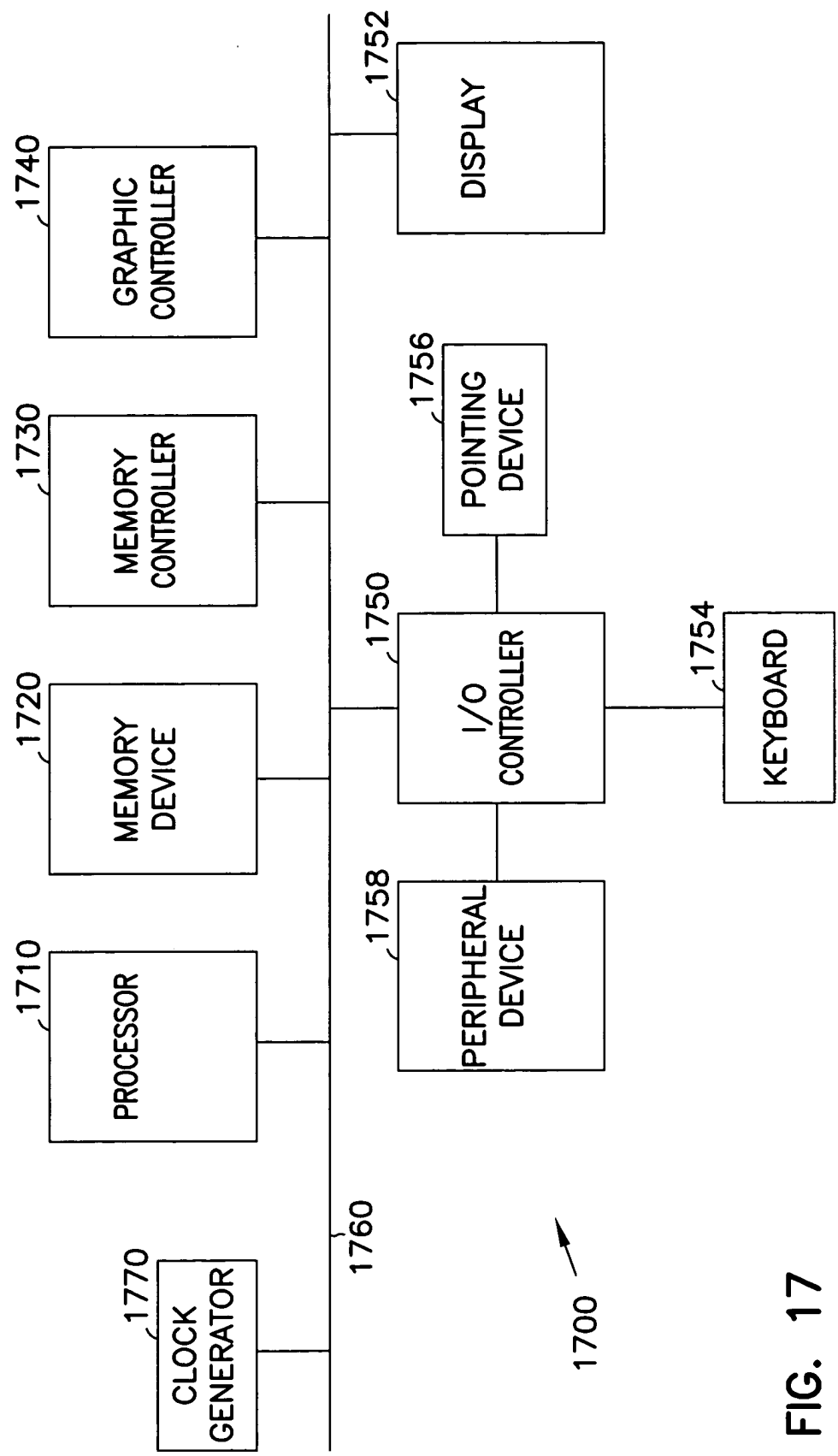


FIG. 17